

UNION CARBIDE CORPORATION

Responsiveness Summary

Union Carbide Corporation's ("UCC") Position Paper did not comment on the Preliminary Waste-In Determinations for its facilities. Accordingly, no revisions or adjustments are reflected in our Revised Waste-In Determinations

Relevant Facilities and Background

- Union Carbide Corporation ("UCC") responded to the Allocation Questionnaire for ten facilities it operated during the Relevant Time Period in Buffalo, Tonawanda, Niagara Falls, Lackawanna, and Niagara, New York and Cleveland, Ohio Of the ten facilities, UCC's Linde Division operated the following six facilities (1) 1811 Broadway, Buffalo, New York, (2) 175 East Park, Tonawanda, New York, (3) 4501 Royal Avenue, Niagara Falls, New York, (4) Lackawanna Plant, (5) Fuhrmann Boulevard, Lackawanna, New York, and (6) Lakeside Avenue, Cleveland, Ohio In addition, UCC's Carbon Products Division operated the following three facilities (1) National, 3625 Highland Avenue, Niagara Falls, New York; (2) Republic, 3501 Hyde Park Boulevard, Niagara, New York, and (3) Acheson, Buffalo Avenue and Elizabeth Street, Niagara Falls, New York Finally, UCC also operated the Electro Metallurgical Co plant located at 137 47th Street in Niagara Falls, New York (Questionnaire Response ("QR") at 1-2) Each of these facilities is discussed separately below
- The Linde Division facility located at 1811 Broadway in Buffalo, New York (the "Linde Buffalo Facility") operated from an unspecified date through the end of the Relevant Time Period The Linde Buffalo Facility manufactured acetylene and operated as a gas repackaging plant transferring bulk gases to smaller cylinders (QR at 1, 4-5) Waste oil was generated by the facility as a result of oil changes performed on vehicles and mechanical equipment Oil generated by these activities included gear, lubricating and hydraulic oils and was stored in either a 500 gallon tank or 55-gallon drums ¹ (QR at 9-10) Booth Oil removed waste materials from this facility on a periodic basis beginning in June, 1968 (BOC001853)

It should be noted that UC each of their facilities, rather they provided a	CC did not pro a general des	ovide a specific desc cription for all of th	cription of the waste oils generated by eir facilities
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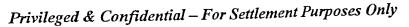
- The Linde Division facility located at 175 East Park in Tonawanda, New York (the "Linde Tonawanda Facility") operated for the entire Relevant Time Period (QR at 5) This facility produced cryogenic hardware for separation storage, distribution and utilization of atmospheric gases, silicone chemical formulations, molecular sieve chemical formulations and enhanced tubing during the Relevant Time Period (IATF Report at ITF000222) Waste materials generated by this facility include waste oils produced by vehicle and equipment maintenance and likely consisted of used gear, lubricating and hydraulic oils (QR at 10) Based upon the available documentation, Booth Oil removed waste materials from either a 500 gallon tank or 55-gallon drums at this facility beginning in January, 1979 (QR at 9, BOC000928)
- The Linde Division facility located at 4501 Royal Avenue in Niagara Falls, New York (the "Linde Niagara Falls Facility") operated from 1981 through the end of the Relevant Time Period (QR at 2) This facility operated as a welding flux manufacturing location during the Relevant Time Period (QR at 5.) Waste materials generated by this facility include waste oils produced by vehicle and equipment maintenance and likely consisted of used gear, lubricating and hydraulic oils (QR at 10.) Based upon the available documentation, there is no information that indicates that Booth Oil removed waste materials from this facility during the Relevant Time Period. (QR at 2.)
- The Linde Division facility identified simply as the Lackawanna Plant (the "Linde Lackawanna Plant") was located on the Bethlehem Steel Property on Lake Shore Drive and operated from at least 1967 through the end of the Relevant Time Period (QR at 3) This facility manufactured liquid and gaseous oxygen, nitrogen and argon (QR at 4; IATF Report at ITF000222) The waste streams generated by this facility included waste compressor and turbine oil (QR at 3) For an unknown period, Booth Oil removed waste compressor and turbine oil from the Linde Lackawanna Plant for a unknown period that were stored in either a 500 gallon tank or 55-gallon drums (QR at 3, 9, IATF Report at ITF000223)
- The Linde Division facility located on Fuhrmann Boulevard in Lackawanna, New York ("Linde Fuhrmann Boulevard") operated for an unspecified period of time beginning at least as early as 1977 (QR at 3) The products manufactured and the processes used at this facility are not identified in UCC's response Wastes generated by the facility included waste

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oil (QR at 3) Based upon the available documentation, Booth Oil removed waste material from this facility beginning as early as November, 1977 (BOC000929)

- 7. The Linde Division facility located on Lakeside Avenue in Cleveland, Ohio ("Linde Cleveland") operated for an unspecified period of time during the Relevant Time Period. This facility served as the Linde Division's administrative offices (QR at 3) UCC states that waste oil would not have been generated at this facility and that it was likely the billing address for waste oil pick-ups made by Booth Oil for another facility (QR at 3) This statement is supported by the Booth Oil customer card for the Linde Cleveland facility which indicates that the pick-ups identified on the card were for pick-ups from the Linde Tonawanda Facility (BOC000928)
- The Carbon Products Division National facility located at 3625 Highland Avenue in Niagara Falls, New York ("CPD National") operated for the entire Relevant Time Period (QR at 5.) This facility produced synthetic carbon products from calcined anthracite coal Processes used at CPD National included forming, baking, machining and shipping coal and coke products (QR at 4) Waste materials generated by CPD National and removed by Booth Oil include waste oil and spent sludges from degreasing operations (containing 1,1,1-trichloroethane) These wastes were stored in either 55-gallon drums or cleaned out of a trench (QR, Exhibit O at Feb 19, 1981 Fixed Price Construction/Maintenance Order and July 20, 1981 Fixed Price Construction/Maintenance Order, IATF Report at ITF000221, BOC002347) Based upon the IATF Report, this facility had been using Booth Oil for "several years" at the time of the report's publication in March, 1979 (IATF Report at ITF000221)
- Boulevard in Niagara, New York ("CPD Republic") operated for the entire Relevant Time
 Period (QR at 5) This facility produced synthetic carbon products from calcined petroleum
 coke and calcine anthracite coal The CPD Republic facility also produced synthetic graphite
 products Processes used at CPD Republic included forming, baking, machining and shipping
 coal and coke products (QR at 4) Waste materials generated by CPD Republic and removed
 by Booth Oil include waste oil and spent sludges from degreasing operations (containing
 1,1,1-trichloroethane) These wastes were apparently pumped out of a storage pit at the facility
 (QR, Exhibit O at Apr 24, 1979 Fixed Price Construction/Maintenance Order; IATF Report at

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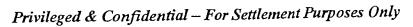
ITF000221, BOC002352) Based upon the IATF Report, this Facility had been using Booth Oil for "several years" at the time of the report's publication in March, 1979 (IATF Report at ITF000221)

- The Carbon Products Division Acheson facility located at Buffalo Avenue and Elizabeth Street in Niagara Falls, New York ("CPD Acheson") operated for the entire Relevant Time Period (QR at 5) This facility produced graphite products from petroleum coke-based amorphous carbon Processes used at CPD National included impregnation, graphitizing, grinding, machining and shipping (QR at 4) Waste materials generated by CPD Acheson and removed by Booth Oil include waste oil and spent sludges from degreasing operations (containing 1,1,1-trichloroethane) These wastes were stored in either a 500 gallon tank or 55-gallon drums (QR, Exhibit O at Feb 19, 1981 Fixed Price Construction/Maintenance Order and July 20, 1981 Fixed Price Construction/Maintenance Order, IATF Report at ITF000221, BOC002338) Based upon the IATF Report, this facility had been using Booth Oil for "several years" at the time of the report's publication in March, 1979 (IATF Report at ITF000221)
- The Electro Metallurgical Co facility located at 137 47th Street in Niagara Falls, New York ("Electro Metallurgical") operated for the entire Relevant Time Period (IATF Report at ITF000224.) This facility produced special alloys, tungsten, ferroalloys, calcium carbide and ferrovanadium ferrotungsten Processes used at the Electro Metallurgical facility include submerged arc, open arc and globar electric furnaces and exothermic and induction furnaces Waste oil was generated by the facility as a result of oil changes performed on vehicles and mechanical equipment Oil generated by these activities included used gear, lubricating and hydraulic oils and were stored in either a 500 gallon tank or 55-gallon drums. (QR at 9-10) Based upon the information recorded in the Booth Oil customer cards, Booth Oil began removing waste from this facility in April, 1963 (BOC001852)

Types and Quantities of Waste Materials Removed by Booth Oil <u>Linde Buffalo Facility</u>

12	The Booth Oil transactional database developed by A2S indicates that Booth Oil
removed 7	1,125 gallons of waste material from this facility between June, 1968 through
	r, 1973 and between May, 1977 through August, 1981

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- Buffalo Facility However, there is no available information, other than the fact that the apparent data gap coincides with the end of one Booth Oil customer card and the beginning of another, that suggests that extrapolation of volume may be appropriate for the 43 month period where no transactional activity is documented. The IATF Report provides no information regarding the facility's usage of Booth Oil and none of the Booth Oil employees that were interviewed recalled making pick-ups from this location.
- The Booth Oil Industrial Waste Permit Continuation Forms indicate that Booth Oil removed 5,216 gallons of waste oil from the Linde Buffalo Facility in 1979 In addition, although the Booth Oil customer card BOC001255 covers the time period May, 1977 through August, 1981, there are no transactions on the card for the year 1979. Therefore, since Union Carbide has provided no alternative or contradictory information for the time period covered by the Booth Oil permit information, this additional volume will be added to the total volume generated by the facility during the Relevant Time Period ² Accordingly, the total volume of waste materials removed by Booth Oil from the Linde Buffalo Facility is 12,341 gallons (7,125 + 5,216) These waste materials likely consisted of used gear, lubricating and hydraulic oils Linde Tonawanda Facility
- The only available information regarding transactional activity between the Linde Tonawanda Facility is the information contained in the Booth Oil database ³ The database indicates that Booth Oil removed 3,125 gallons of waste material (likely consisting of used gear, lubricating and hydraulic oil) from this facility between January, 1979 and the end of the Relevant Time Period

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It should be noted that for BOSAG Members that produced transactional records for periods covered by the Booth Oil Permit Forms, it has been observed that the summary volumes reported on the permit forms compare favorably with actual transactional data.

It should be noted that UCC provided supplemental transactional documentation with their Allocation Questionnaire Response, however, an analysis of the documents provided by UCC revealed that the transactional information recorded on the documents supplied by UCC were duplicative of information already contained in the database

Linde Niagara Falls Facility

There is no available information, either documentary or testimonial, that indicates that Booth Oil removed waste materials from this facility during the Relevant Time Period Rather, the only available information indicates that all transactional activity between the Linde Niagara Falls Facility occurred after the end of the Relevant Time Period (QR at 7, Exhibit D) Accordingly, for purposes of the preliminary waste-in summary, no volume is attributed to this facility

Linde Lackawanna Plant

- 17. There is no available transactional information in the Booth Oil database that indicates that Booth Oil removed waste materials from this facility during the Relevant Time Period However, the recollections of former Linde Lackawanna Plant employees indicate that Booth Oil removed waste compressor and turbine oil from this facility beginning in at least 1974 (QR at 3.) UCC did not provide any volume estimates regarding the quantity of waste material removed by Booth Oil from the facility The IATF Report indicated that Booth Oil and Frontier Pipe Cleaning Company removed a total of 2,000 to 3,000 gallons per year of waste oil from the Linde Lackawanna Plant (IATF Report at ITF000223)
- Using the mid-point of the volume range provided in the IATF Report, <u>i.e.</u>, 2,500 gallons per year, an extrapolated volume can be determined for the facility. Accordingly, assuming that each of the two waste oil collectors removed equal portions of the waste oil generated at the facility, the total volume of waste compressor and turbine oil removed by Booth Oil from the Linde Lackawanna Plant during the Relevant Time Period is 10,000 gallons ((2,500 gal /yr \times 8 yrs) 2 waste oil collectors)

Linde Fuhrmann Boulevard

The only available information regarding transactional activity between the Linde Fuhrmann Boulevard facility is the information contained in the Booth Oil database. The database indicates that Booth Oil removed 2,950 gallons of waste material (likely consisting of used gear, lubricating and hydraulic oil) from this facility between November, 1977 and the end of the Relevant Time Period

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Linde Cleveland

As noted above, the Linde Cleveland facility served as the Linde Division's administrative offices (QR at 3.) Accordingly, for purposes of the preliminary waste-in summary, no volume is attributed to this facility

CPD National

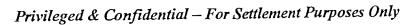
- 21 The Booth Oil transactional database indicates that Booth Oil removed 10,013 gallons of waste material (consisting of waste oil or oil and water) from this facility between June, 1978 through November,1981. The volume reported in the database consists of information recorded on the Booth Oil customer cards and on documents provided as part of UCC's Allocation Questionnaire Response Documents provided by Union Carbide include Booth Oil pick-up tickets, Booth Oil invoices and UCC Fixed Price Construction/Maintenance Orders
- As noted above at paragraph 8, the IATF Report indicates that this facility had been using Booth Oil for "several years" as of March 1979, the date the draft IATF Report was published (IATF Report at ITF000221.) Assuming several years to mean three years, and in the absence of contradictory information, it is assumed for purposes of the preliminary waste-in summary that CPD National began using Booth Oil in 1976 Therefore, it is necessary to extrapolate volume for the undocumented period of time, <u>i.e.</u>, January, 1976 through May, 1978.
- 23. Based upon the information contained in the Booth Oil transactional database, the average annual volume removed from CPD National by Booth Oil for the three years for which data is available (1978, 1980, 1981) is approximately 3,340 gallons (10,013 gallons 3 yrs). Therefore, for the two years of assumed waste removal by Booth Oil from the CPD National facility where no transactional information is available (1e, 1976 and 1977), it is calculated that Booth Oil removed a total volume of 6,680 gallons of waste materials from CPD National (3,340 gal /yr × 2 yrs) Accordingly, the total volume of waste materials removed from the CPD National Facility by Booth Oil during the Relevant Time Period is 16,693 gallons (10,013 + 6,680)
- Waste materials removed from this facility include waste oil, oil and water, oil sludge and spent degreasing sludges from degreasing operations

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CPD Republic

- 25 The Booth Oil transactional database indicates that Booth Oil removed 6,650 gallons of waste material (consisting of waste oil or oil and wafer) from this facility from April, 1979 through October, 1979 and September, 1981 through November,1981. The volume reported in the database consists of information recorded in documents provided as part of UCC's Allocation Questionnaire Response. Documents provided by Union Carbide include Booth Oil pick-up tickets, Booth Oil invoices and UCC Fixed Price Construction/Maintenance Orders.
- 26. As noted above at paragraph 9, the IATF Report indicates that this facility had been using Booth Oil for "several years" as of March 1979, the date the draft IATF Report was published (IATF Report at ITF000221) Assuming several years to mean three years, and in the absence of contradictory information, it is assumed for purposes of the preliminary waste-in summary that CPD Republic began using Booth Oil in 1976 Therefore, it is necessary to extrapolate volume for the undocumented period of time, <u>i.e.</u>, January, 1976 through March, 1979
- 27. Based upon the information contained in the Booth Oil transactional database, the average annual volume removed from CPD Republic by Booth Oil for the two years for which data is available (1979, 1981) is approximately 3,325 gallons (6,650 gallons 2 yrs) Therefore, for the 3 25 years of assumed waste removal by Booth Oil from the CPD Republic facility where no transactional information is available (i e , January, 1976 through March, 1979), it is calculated that Booth Oil removed a total volume of 10,806 gallons of waste materials from CPD National (3,325 gal/yr. × 3 25 yrs) Accordingly, the total volume of waste materials removed from the CPD Republic facility by Booth Oil during the Relevant Time Period is 17,456 gallons (6,650 + 10,806)
- Waste materials removed from this facility include waste oil, oil and water, oil sludge and spent degreasing sludges from degreasing operations

CPD Acheson



- As noted above at paragraph 10, the IATF Report indicates that this facility had been using Booth Oil for "several years" as of March 1979, the date the draft IATF Report was published (IATF Report at ITF000221) Assuming several years to mean three years, and in the absence of contradictory information, it is assumed for purposes of the preliminary waste-in summary that CPD Acheson began using Booth Oil in 1976 Therefore, it is necessary to extrapolate volume for the undocumented period of time, <u>i.e.</u>, January, 1976 through March, 1979
- The only available transactional information from which to develop an extrapolation is an August 15, 1982 transaction of 250 gallons on the customer card for this facility (BOC000928) Using the documented transaction as a monthly average of waste removed by Booth Oil, an extrapolation for the undocumented period provides that the total volume of waste material removed by Booth Oil from the CPD Acheson facility is 9,750 gallons (250 gals /mo x 39 mos).
- Waste materials removed from this facility include waste oil, oil and water, oil sludge and spent degreasing sludges from degreasing operations

Electro Metallurgical

33 The Booth Oil transactional database indicates that Booth Oil removed 6,425 gallons of waste material from this facility between April, 1963 and February, 1974 and between August, 1977 and July, 1980 Based upon the non-periodic nature of the transactional information on the Booth Oil customer cards and the lack of any other documentary or testimonial information that would suggest this facility was a regular or routine customer of Booth Oil, extrapolation of waste volumes for other time periods is not appropriate

Summary of Information

- The total volume of waste materials removed by Booth Oil from Union Carbide Corp facilities during the Relevant Time Period is 78,740 gallons (12,341 + 3,125 + 10,000 + 2,950 + 16,693 + 17,456 + 9,750 + 6,425)
- Booth Oil picked up the following waste materials from UCC facilities during the Relevant Time Period used gear, lubricating and hydraulic oils, waste compressor and turbine

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